Waste Management Disposal	**)**	**Departmental**
Services of Maine	**)**	**Findings of Fact and Order**
Somerset County	**)**	**Air Emission License**
Norridgewock, Maine	**)**	**Amendment #2**
A-816-71-C-A		

After review of the air emission license minor modification application, staff investigation reports, and other documents in the applicant's file in the Bureau of Air Quality, pursuant to 38 M.R.S.A., Section 344 and Section 590, the Department finds the following facts:

I. REGISTRATION

A. Introduction

Waste Management Disposal Services of Maine (WMDSM) of Norridgewock, Maine was issued Air Emission License A-816-71-A-N on October 30, 2001. The license was subsequently amended on January 11, 2002 (A-816-71-B-A).

WMDSM has requested an amendment to their license to:

1. License the addition of another flare as part of their Phase 8 expansion.
2. Increase Phase 11 gas flow rate to a nominal rate of 2,000 SCFM.
3. Limit total facility flare gas flow rate to a nominal rate of 2,000 SCFM to remain a minor source.
4. Change the SO_2 emission rate to 22.8 #/hr due to gas composition variability.
5. Specifically allow the use of 16 wellhead flares at the landfill for operational flexibility.

B. Emission Equipment Changes

Process Equipment Change

Equipment	Maximum Design Capacity	Maximum Process Flow Rate	Stack #
Landfill Gas Oxidation Unit #1	60.0 MMBtu/hr	2,000 SCFM	#1
Landfill Gas Oxidation Unit #2	60.0 MMBtu/hr	2,000 SCFM	#2

Bold depicts new unit.
SCFM = Standard Cubic Feet per Minute

C. Application Classification

The modification of a minor source is considered a major modification based on whether or not expected emission increases exceed the "Significant Emission Levels" as given in Maine's Air Regulations. This modification is determined to be a minor modification and has been processed as such.

II. MINOR MODIFICATION DESCRIPTION

A. New Landfill Gas Oxidation Unit #2 Phases 8 and 9

WMDSM plans to install an additional Landfill Gas Collection and Control System at the Crossroads facility in Norridgewock as part of Phases 8 and 9 of the landfill. Phases 8 and 9 will accept municipal solid waste (MSW) and will emit landfill gas. Landfill gases, including volatile organic compounds (VOCs) and non-methane organic compounds (NMOC), increase for a number of years as waste is added, level off, and begin to decrease as the organic constituents in the waste degrade. WMDSM intends to construct and operate a landfill gas management and blower/process flare system to combust the landfill gas generated. The landfill gas extraction system will consist of wells installed in the waste, header and lateral pipelines, and a blower/process flare system. The landfill gas will be collected and will be combusted in an oxidation unit to destroy volatile organic compounds (VOCs), hazardous air pollutants (HAPs), and odors.

The proposed landfill gas oxidation unit (flare system) for the existing Phase 9 and proposed Phase 8 landfill will have a capacity of 60.0 MMBtu/hr and is fed by a blower with a design capacity of 2,000 scfm that will draw gas from extraction wells in the landfill. The proposed flare unit will only utilize propane in the startup sequence to ignite the pilot which will ignite the landfill gas. The flare unit is equipped with a thermocouple at the main flame to monitor the continuous presence of flame to prevent the release of uncombusted landfill gas. If the flare unit stops operating due to loss of flame at the burner tip, the controller will automatically shut the blower down, and close a pneumatic "fail safe" valve at the main header. After an operator specified cool-down time, the flare unit will initiate an auto relight sequence to bring the process flare unit back on-line.

To remain a minor source, WMDSM will limit the flow rate of both landfill gas oxidation units #1 and #2 to a total maximum flow rate of 2,000 scfm. The flow rate of the landfill gas to the two permanent flare units will be monitored by thermal mass flow meters with digital totalizers. The flow rate of the landfill gas to any portable flare units with be monitored by tracking hours of operation and flow readings. The flare oxidation units will be equipped with an hour meter which will display the cumulative number of hours each flare system has been in operation.

The flare oxidation units are designed to meet BACT criteria with at least 98 percent hydrocarbon destruction efficiency. The 98 percent combustion efficiency can be achieved with an open flame flare provided that the flare is operated with no visible emissions, with a flame present, and with correct landfill gas flow rates and heat content in accordance with the parameters established in 40 CFR 60.18. The gas flow rate and flame presence will be monitored on site by the metering and charting instrumentation of the process flare equipment.

With the construction of the Phase 12 landfill, the Crossroads facility has a capacity greater than 2.5 million Mg (2.75 million tons) and is subject to EPA New Source Performance Standards (NSPS) Subpart WWW, for Municipal Solid Waste (MSW) Landfills. Reporting and testing is being conducted to determine whether NSPS mandates the control of collected MSW landfill emissions through the use of control devices. Nevertheless, the Phase 8 and 9 landfill gas flare has been designed in accordance with the EPA criteria for flares as specified by 40 CFR 60.18 and therefore satisfies BACT requirements.

C. BACT for the Landfill Gas Flare System

The regulated pollutants emitted from the landfill gas flare oxidation unit are particulate matter (PM), particulate matter with a diameter smaller than ten microns (PM_{10}), sulfur dioxide (SO_2), nitrogen oxides (NO_x), carbon monoxide (CO), volatile organic compounds (VOC) and hazardous air pollutants (HAP) as specified in Departmental Regulation's Chapter 115, Appendix B.

BACT for VOC and HAP emissions from the WMDSM landfill shall be the use of a landfill gas oxidation unit which operates at 98% combustion efficiency and meets the proposed emission limits in the conditions.

BACT for CO and SO_2 emissions from the oxidation unit shall be operating the unit in accordance with manufacturer's specifications which will meet the proposed emission limits in the conditions.

BACT for particulate matter (PM) limit as specified and visible emissions from the oxidation unit shall be good combustion practices and operating the unit in accordance with manufacturer's specifications. Visible emissions from the oxidation unit shall not exceed 5% opacity except for 5 minutes in any 2 hour period.

BACT for the oxidation unit shall also include operating the oxidation unit in accordance with manufacturer's specifications and shall include monitoring the continuous presence of a flame with a thermocouple at the main flame. In addition, BACT shall include monitoring landfill gas flow rate with a thermal mass flow meter equipped with a digital totalizer and a continuous paper chart recorder. Also, the flare oxidation unit will be equipped with an hour meter which will display the cumulative number of hours the flare system has been in operation.

Therefore, the Department finds that BACT for the landfill gas emissions shall be the use of a landfill gas oxidation unit operated under manufacturer's specifications.

C. Wellhead Flares

WMDSM plans to operate 16 wellhead flares, on an as-needed basis, at locations throughout the landfill. The continued use of wellhead flares provides operational flexibility to WMDSM relative to the control of odors and landfill gas at the site. WMDSM intends to actively collect and control landfill gas and odors at the site through permanent connections to the active gas system, but construction of these connections take time. The use of wellhead flares can provide some immediate control prior to installing an expanded active control system. NSPS requirements for collection and control of landfill gas is not expected to be applicable for another 5 years. Additionally, the installation of landfill gas collectors in specific areas is not required under NSPS until two years after areas have reached final grades or five years after initial waste placement in active filling areas. The use of wellhead flares is consistent with NSPS regulations as they will meet the standards of 40 CFR Part 60.18 for flare design and operation.

D. Revised Facility Emissions

Total Allowable Annual Emissions
(based on a 12 month rolling total)
(used to calculate the annual license fee)

Pollutant	Tons/year
PM	22.4
PM_{10}	22.4
SO_2	99.9
NO_x	19.0
CO	97.5
VOC	1.1
HAP	0.2

III. AMBIENT AIR QUALITY ANALYSIS

According to the Maine Regulations Chapter 115, the level of air quality analyses required for a minor modification shall be determined on a case-by-case basis.

A SCREEN3 screening model was run to determine if the predicted pollutant impacts from the Norridgewock Landfill flares would meet all MAAQS. The results of the analysis indicate the revised emissions from the flare are below all respective MAAQS.

An analysis was also performed to determine H_2S impacts from the flares. The results of the analysis indicate if all the VOC and HAP emissions were conservatively assumed to be H_2S, H_2S emissions from the flares are well below the guidelines set forth in "Maine Bureau of Health and Environmental Toxicology Program Interim Ambient Air Guidelines" dated January 1993.

ORDER

Based on the above Findings and subject to conditions listed below the Department concludes that the emissions from this source:

- will receive Best Practical Treatment,
- will not violate applicable emission standards,
- will not violate applicable ambient air quality standards in conjunction with emissions from other sources.

Waste Management Disposal	**)**	**Departmental**
Services of Maine	**)**	**Findings of Fact and Order**
Somerset County	**)**	**Air Emission License**
Norridgewock, Maine	**)**	**Amendment #2**
A-816-71-C-A	**6**	

The Department hereby grants Air Emission License A-816-71-C-A, subject to the conditions found in Air Emission License A-816-71-A-N, amendment A-816-71-B-A and in the following conditions:

The following replaces Condition (16) of License A-816-71-B-A (Amendment #1):

(16) Landfill Gas Flares (Oxidation Units) #1 and #2

A. Each oxidation unit has a maximum design capacity of 60.0 MMBtu/hr. The two oxidation units at WMDSM shall each not exceed the following emissions.

Oxidation Unit Emission Limits

Pollutant	lb/hr
PM	5.10
PM_{10}	5.10
SO_2	22.8
NO_x	4.08
CO	22.20
VOC	0.24
HAP*	0.04

* HAP emissions are as specified in source application A-816-71-A-N, Attachment 2 and in Departmental Regulation Chapter 115, Appendix B. (See attached HAP list.)

B. Visible emissions from each oxidation unit shall not exceed 5% opacity except for 5 minutes in any 2-hour period.

C. The landfill gas flares shall be operated with a flame present at all times.

The following replaces Condition (17) of License A-816-71-A-N:

(17) In lieu of the standard conditions 11 and 12 above regarding stack testing, which are not applicable to this emission source, WMDSM shall make a determination within 180 days of start up of the flare systems (oxidation units #1 and #2) that the actual exit velocity of the gas from each system is less than the maximum velocity

allowed under 40 CFR 60.18. WMDSM shall submit a written report to the Department within thirty (30) days from completion of this determination. The report shall include all visible emission readings, heat content determination, flow rate measurements, and exit velocity determinations made during the determination as specified in 40 CFR Part 60.18.

The following replaces Condition (19) of License A-816-71-A-N:

(19) For Compliance Assurance, WMDSM shall comply with the following:

A. WMDSM shall monitor for the continuous presence of a flame at each oxidizer unit's main flame with a thermocouple. WMDSM shall maintain records of all periods of operation during which the main flame of the flare was absent.

B. WMDSM shall monitor landfill gas flow rate to each oxidizer unit with a thermal mass flow meter and shall record gas flow with a digital totalizer and a continuous chart recorder. The gas flow rate to each oxidizer shall be measured and recorded at least every 15 minutes.

The thermal mass flow meter must record accurate and reliable data. If the monitor is recording accurate and reliable data less than 98% of the source-operating time within any quarter of the calendar year, the Department may initiate enforcement action and may include in that enforcement action any period of time that the parameter monitor was not recording accurate and reliable data during that quarter unless the licensee can demonstrate to the satisfaction of the Department that the failure of the system to record accurate and reliable data was due to the performance of established quality assurance and quality control procedures or unavoidable malfunctions.

C. WMDSM shall use an hour meter to display the cumulative number of hours of each flare system operation and shall maintain a log recording hours of operation.

D. The combined total throughput of landfill gas through units #1 and #2 shall not exceed 2,000 scfm. Compliance is based on flare gas digital totalizers documenting the combined throughput of landfill gas through the two flares or, for the portable units, tracking hours of operation and flow readings.

E. WMDSM shall operate each oxidation unit within the equipment parameter boundaries established during the most recent performance test.

F. WMDSM shall maintain records indicating all routine and non-routine maintenance on each oxidizer unit.

G. WMDSM shall maintain purchase records for the auxiliary propane fuel indicating the quantity of fuel purchased and the heat content of the fuel.

H. WMDSM shall maintain monthly records of HAP emissions as listed in source application A-816-71-A-N, Attachment 2 and as specified in Departmental Regulation Chapter 115, Appendix B (See attached HAP list). HAP emissions shall be calculated based on EPA's AP-42, "Compilation of Air Pollutant Emission Factors," for landfill gas emissions or site-specific test data, the monthly totalized volume of landfill gas extracted, and the destruction efficiency of the oxidizer unit.

I. Record-Keeping
For all of the equipment parameter monitoring and recording, required by this license, WMDSM shall maintain records of the most current six year period and the records shall include:
1. Documentation which shows monitor operational status during all source operating time, including specifics for calibration and audits; and
2. A complete set of all monitored parameters as specified in this license. All parameter records shall be made available to the Bureau of Air Quality upon request.
3. Records of the control device vendor specifications shall be maintained until the removal of the oxidizer unit.

The following are new conditions to License A-816-71-A-N:

(24) Wellhead Flares

WMDSM may operate up to 16 wellhead flares designed and operated in accordance with 40 CFR Part 60.18.

(25) WMDSM shall notify the Department within 48 hours and submit a report to the Department on a quarterly basis if a malfunction or breakdown in any component causes a violation of any emission standard (Title 38 MRSA §605-C).

(26) **A. Annual Emission Statement**
In accordance with MEDEP Chapter 137, the licensee shall annually report to the Department by September 1, the information necessary to accurately update the State’s emission inventory by means of:

1) A computer program and accompanying instructions supplied by the Department;

or

2) A written emission statement containing the information required in MEDEP Chapter 137.
Reports and questions should be directed to:

Attn: Criteria Emission Inventory Coordinator
Maine DEP
Bureau of Air Quality
17 State House Station
Augusta, ME 04333-0017

Phone: (207) 287-2437

B. **Toxic Air Pollutants Emission Statement**

In accordance with MEDEP Chapter 137, the licensee shall report, no later than September 1, every two years (2002, 2004, etc.) or in a timeframe designated to the Department, the information necessary to accurately update the State's toxic air pollutants emission inventory by means of a written emission statement containing the information required in MEDEP Chapter 137.

Reports and questions on the Air Toxics emissions inventory portion should be directed to:

Attn: Toxics Inventory Coordinator
Maine DEP
Bureau of Air Quality
17 State House Station
Augusta, ME 04333-0017

Phone: (207) 287-2437

(27) WMDSM shall pay the annual air emission license fee within 30 days of January 30th of each year. Pursuant to Title 38 §353-A, failure to pay this annual fee in the stated timeframe is sufficient grounds for revocation of the license under Title 38 §341-D, subsection 3.

(28) This amendment shall expire concurrently with Air Emission License A-816-71-A-N.

DONE AND DATED IN AUGUSTA, MAINE THIS DAY OF , 2002.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY: _____
MARTHA G. KIRKPATRICK

PLEASE NOTE THE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of initial receipt of application December 6, 2001
Date of application acceptance February 8, 2002

Date filed with the Board of Environmental Protection _____

This Order prepared by Mark E. Roberts, Bureau of Air Quality